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WASHINGTON LETTER.

WASHINGTON, SEPTEMBER 10, 1891.

Washington has had an epidemic of conventions. There is an impression abroad that this locality is a very proper one to leave alone in summer time. With the exception of two days, no more delightful temperature could be found in the United States than prevailed here during the month of August. Here is a list of the organizations that thoroughly enjoyed during that month the many attractions of the capital of the Nation :

The American Microscopical Society.

The Association of American Agricultural College and Experiment Stations.

The Association of Official Agricultural Chemists.

The Society for the Promotion of Agricultural Science.

The Conference of American Chemists.

The Association of Economic Entomologists.

The American Association for the Advancement of Science.

The Geological Society of America.

The Fifth International Congress of Geologists.

The Catholic Total Abstinence Union of America.

The Association of Amateur Oarsmen—Regatta.

The Old Time and Military Telegraphers.

During the month of September there will be reunions of the Congress of American Physicians and Surgeons, the American Pomological Society, delegates

of Catholic Temperance Societies, the Supreme Council of Chosen Friends, and the Superintendents of the Railway Mail Service. And in October the Methodist Ecumenical Council.

The most numerously attended of these was the meeting of the American Association for the Advancement of Science. Six hundred and fifty-three members were present; three hundred and seventy-one new ones were elected. Two hundred and forty-five papers were announced in the eight sections, the largest number being in the section of Biology. There was a large amount of very eager interest, amounting in some cases to positive enthusiasm.

It will be quite impossible to do more than designate by letter some of the most notable productions:

SECTION A.—MATHEMATICS AND ASTRONOMY. 20
Papers.

Principles of the algebra of physics, by A. Macfarlane.

The secular variation of terrestrial latitude, by G. C. Comstock.

Latitude of Sayre Observatory, by C. L. Doolittle.

Exhibition and description of a new scientific instrument, the aurora-inclinometer, by Frank H. Bigelow.

SECTION B.—PHYSICS. 23 Papers.

A new method of measuring the expansion of solids, by E. W. Morley.

Do tornadoes whirl? By H. A. Hazen.

SECTION C.—CHEMISTRY. 37 Papers.

Synthesis of weighed quantities of water from weighed

quantities of oxygen and hydrogen, by Edward W. Morley.

The influence of negative atoms and groups of atoms on organic compounds, by Paul C. Freer.

SECTION D.—MECHANICAL SCIENCE. 15 Papers.

On a method of holding samples of wood and brick for determination of tensile strength, by James E. Denton.

SECTION E.—GEOLOGY AND GEOGRAPHY. 30 Papers.

Preliminary report of observations on the deep well near Wheeling, West Va., by William Hallock.

The altitude of the eastern and central portions of the United States during the glacial period, by T. C. Chamberlin.

Neocene and pleistocene continent movements, by W J McGee.

The plant-bearing deposits of the American trias, by Lester F. Ward.

The relations of the Archean and Algonkian in the north west, by C. R. Van Hise.

New meteoric iron from Arizona, containing diamonds, by A. E. Foote.

SECTION F.—BIOLOGY. 64 Papers.

Uses of the fermentation tube in bacteriology, with demonstrations, by Theobald Smith.

Micro-organisms as insecticides, by C. V. Riley.

The present condition of the study of deep-sea fishes, by G. Brown Goode.

Another chapter in the history of the Venus fly trap by J. M. McFarlane.

On the importance of a table at the Naples station,
by Charles W. Stiles.

The persistence and relation of faunal realms, by
Theodore Gill.

SECTION H.—ANTHROPOLOGY. 30 Papers.

A linguistic map of North America, by J. W. Powell.

An experiment in human stirpiculture, by Anita Newcomb McGee.

Evidences of the high antiquity of man in America,
by Thomas Wilson.

On the distribution of stone implements in the tide-water provinces, by W. H. Holmes.

Outlines of Zuñi creation and migration myths considered in their relation to the Ka-ka and other dramas or so-called dances, by Frank H. Cushing.

SECTION I.—ECONOMIC SCIENCE AND STATISTICS.

26 Papers.

The census counting machine, by J. S. Billings.

The southern oil fields, by W J McGee.

The artesian wells and underground waters of central Texas, by Robert T. Hill.

Free coinage ; Why not ? By Edward Atkinson.

The coinage ratio in our silver policy, by Edward T. Peters.

The local committee presented in an attractive form the "Programme"—192 pp., and a "Guide to Washington and its scientific institutions," accompanied by a 20-foot contour map of the district and adjacent portions of Maryland and Virginia.

The Guide is a concise and very admirable exposition

of the District, City, Departments, Scientific Institutions and Libraries.

At the final meeting of the association Mr. G. Brown Goode gave an account of the history of this organization; stating that it had two parents,—the National Institution for the Promotion of Science, and the American Association of Geologists. When in 1848 the American Association for the Promotion of Science was founded in Philadelphia, one of the parent bodies contributed the first half of the name, viz., "The American Association," while the Washington society contributed the remainder—"For the Promotion of Science."

The National Institution above referred to, was very powerful for a time. In 1844 it had 1,600 names upon its rolls, and in that year organized in Washington the first national congress of scientific men ever held in America. President Tyler, John Quincy Adams and John C. Spencer presided at the meetings, and nearly fifty papers of great value were read.

The Secretary of the Association announced that the Government of Honduras had granted the Museum at Cambridge, Mass., the exclusive right to explore the scientific resources of that country for a period of ten years.

The excursions of the Association at this session included visits to Harper's Ferry, Old Point Comfort, Norfolk, Virginia Beach, Luray Cave, Atlantic City, and Mount Vernon.

The Geological Society of America held five sessions on the 24th and 25th of August. This society has a membership of 200, comprising the leading geologists of

the country. Several eminent scientists from Germany, England, Russia, Belgium, Sweden and Roumania read papers and participated in the discussions at this meeting, as did also C. D. Wolcott, Lester A. Ward, R. A. F. Penrose, Jr., Bailey Willis, Thomas C. Chamberlin, Warren Upham, E. W. Hilgard and others.

The International Congress of Geologists,—one of the most celebrated scientific organizations in the world—began its fifth meeting on the 26th of August. Sessions were continued during six days. The Congress meets about once in every three years. The first meeting was held in Paris ; the subsequent ones in Bologna, Berlin and London. The meeting just closed is the first one held in this country. Large numbers of the scientists who attended meetings of organizations, preceding this, remained over for the purpose of seeing men whose names are known the world over for their splendid researches and investigations. The honorary Presidents are two eminent Americans—James Hall and J. D. Dana. The President is also an American—the venerable J. S. Newberry.

There were present three members from Austria-Hungary, three from Canada, one from Chile, four from France, twenty-one from Germany, ten from Great Britain, three from Mexico, one from Peru, three from Roumania, seven from Russia, four from Sweden, two from Switzerland, and one hundred and fifty-seven from the United States ; also delegates from seven foreign Governments, and nineteen foreign and American scientific organizations.

In the place of papers or essays prepared and read or submitted by their respective writers, the plan of the

International Congress contemplates the discussion of live geologic topics provisionally determined upon in advance, subject to the approval of the Council. The Council consists of the Founders' committee, 10 members; the Committee of organization, 34 members; and the Bureau, 64 members;—also the Presidents of Geological Societies and Directors of great Geological Surveys who may be attending the meeting. As at present constituted the Founders' Committee is mixed—American and foreign; the Committee of Organization entirely American; the Bureau, almost entirely foreign.

The business outlined consisted of: (1) Report of committee on classification and nomenclature, and discussion of same. (2) Report of committee on map of Europe, and discussion of same. (3) Discussion of classification of Pleistocene rocks. (4) Discussion of correlation. (5) Discussion of map notation.

No reports were submitted under the first two divisions, so that the attention of the Congress was in the main confined to the last three, viz.: the classification of Pleistocene rocks; correlation of geological formations,* and map-coloring and cartography.

A feature of this Congress was the trip of 6,000 miles to the most interesting geologic points, to terminate in New York, September 26th. The route arranged traverses thirty-nine degrees of longitude, and crosses twenty States and Territories and a Province of Canada. In each region of special geological interest the party will be guided by geologists † familiar with

* The U. S. Geological Survey has in press a number of essays on this subject.

† Arnold Hague; J. P. Iddings; S. F. Emmons; G. K. Gilbert; Whitman Cross; J. W. Powell; N. H. Winchell.

the ground. A large number availed themselves of this opportunity, using a special train of vestibuled cars which will be the home of the party during the principal portion of the journey.

No one present received such marked attention as the distinguished Paleontologist of New York. Professor James Hall, an incessant worker all his life, finds himself at eighty-one in the possession of the vigor and strength that few men have at forty. He is the Nestor of American geologists, and one of the founders of the International Congress. He attended the meeting in Paris in 1878, in Bologna in 1881, and in Berlin in 1885. At the session just ended the members gave him a special greeting in writing, subscribed by columns of names that would excite the envy of all the autograph collectors in Christendom. Prof. James Macfarlane once said: "The State of New York is to the geologist what the Holy Land is to the Christian, and the works of her Paleontologist are the old Testament Scripture of science."

RESULTS OF THE CENSUS.—There are some important developments in what (for the present) are termed minor mineral industries. The importation of Trinidad asphaltum into the United States increased in the decade between 1880 and 1890, from 3,913 to 54,692 tons.* This material, as is well known is chiefly used for street pavements, and its application to any great extent in this country seems to date from the year 1882. Prior to that date there had been laid 223,467 square yards; but in 1890 there was an aggregate of 6,803,054 square yards, equivalent to 446 miles of roadway 26

* Census bulletin, 1890, no. 75, by E. W. Parker.

feet wide. It would seem that climatic efforts had little consideration in the application of the material to this purpose, as the range of cities where it is used extends from New Orleans to Quebec,—the largest proportion being in the north, if the city of Washington with its one hundred miles is included in this division. The State of New York claims the largest number of localities. About fifty-five thousand square yards of bituminous limestone pavement were laid in Washington and in New York City prior to 1884, but nearly all of this was subsequently taken up and replaced by Trinidad asphaltum. Captain F. V. Greene, of New York City, estimates that the total amount of bituminous limestone pavement now in use in the United States does not exceed seventy-five thousand square yards. The asphalt pavements in Europe are all made from this limestone. The total area covered is about one-fourth of that covered by Trinidad asphalt pavements in the United States, and exists in Berlin, London, Paris, and a few other cities, probably not exceeding ten in all.

The production of asphaltum in the United States to any appreciable extent dates as recently as the year 1888, when there was the very marked average of 50,000 tons over 4,000 in 1887, due to the discovery in California of bituminous rock (a sandstone formation impregnated with asphaltum), which came into the market as a competitor with other kinds of material for street paving. Until this remarkable formation in California, the island of Trinidad, France and Switzerland furnished the bulk of the world's supply.

The bituminous rock is more easily and cheaply prepared for street-paving purposes than any of the

asphaltum products. In the case of the rock of Ventura and Santa Barbara counties, California, it is only necessary to mix it when heated with the sand of the locality where it is used, in the proportion of from three to eight times by bulk of sand to one of asphaltum. It requires only an hour after laying to "set" and be ready for traffic. Once properly mixed and laid, it seems practically indestructible. The bituminous rock of San Luis Obispo and Santa Cruz counties is thoroughly impregnated with bitumen. The only treatment necessary is to steam it, so as to thoroughly mix its ingredients and soften it for spreading to a uniform thickness and a smooth, even surface. It is reported that pavements made of this material fifteen years ago and used under heavy travel have recently been removed and found to have lost very little either in weight or thickness; also, that it stands equally well the high temperatures of the interior cities and the cold, damp atmosphere of the coast.

Notwithstanding these great advantages of the California bituminous works, Trinidad asphaltum is used for street paving in eastern cities to the almost entire exclusion of other kinds. The railroad freight rates from the Pacific coast practically shut out the bituminous rock from competition in the eastern cities. A similar condition inversely stated, may be said to affect the sale of Trinidad asphaltum in Europe, since the bituminous limestones of France and Switzerland, having the advantage in freights, control the markets. It is not unlikely that asphaltum deposits will be found in other portions of the United States.

The value of buhrstones and millstones produced in

the United States has decreased from \$150,000 in 1883 to \$35,155 in 1889, and the importations from \$125,072 in 1881 to \$40,884 in 1889. This is due largely to the introduction of the roller process for grinding cereals. Proprietors of flouring mills not using the roller process prefer stones made from French buhr, a quality not yet found in the United States. The American product is found in the Allegheny range in New York, Pennsylvania, Virginia and North Carolina.

In the same region, and extending southward through South Carolina and Georgia, is found the American product of asbestos, which has shown an annual decrease since 1882. The product of that year was 1,200 tons; in 1889 it was 30 tons. But the imports of this article have increased from a valuation of \$9,736 in 1880 to \$263,393 in 1889. While the American article is said to stand a greater degree of heat than the foreign material, the fibre is more brittle and harsh, and not so well adapted to the manufacture of spun or woven goods.

The pyrites treated in the Census investigations includes only that mined for its sulphuric contents and used in the manufacture of sulphuric acid. It occurs more or less plentifully in almost every State of the Union, but its production during 1889 was limited to three States, New Hampshire, Massachusetts and Virginia, the largest being in Virginia. Considering the liberal distribution of pyrites and the economy with which sulphuric acid may be prepared from it, the production is as yet comparatively small. But more attention is now being paid to it, particularly in the Southern States. The increase of the product has been very

marked, viz., 12,000 long tons in 1882 and 104,950 short tons in 1889.

Mr. R. L. Packard* says that aluminium has been attracting an amount of attention during the last two or three years which is out of proportion to its actual importance as a metal and the position in the arts which it has hitherto occupied. This is accounted for by the comparatively recent appearance of the metal in commerce, the difficulty of extracting it, and the unfamiliar and elaborate metallurgical processes which have been invented in consequence. Mr. Packard reviews briefly the history of these methods of extraction, from the date of Sir Humphry Davy's experiments in 1807 to the electro-metallurgical processes of the last decade. The pioneer of this last industry is the Cowles Electric Smelting and Aluminum Company at Lockport, N. Y., established in 1885. The total production of aluminium in the United States during 1889, including that contained in alloys was 47,468 pounds, with a value of \$97,335.

Until the recent metallurgical use of aluminium in treating molten iron was introduced, the metal was worked in this country in a small way, principally for parts of optical, engineering, and astronomical instruments, balance beams, light weights, and the like where lightness and strength are desired. It had never been seen in any quantity until the Paris Exposition of 1855, where it was shown in ingots and in the form of manufactured articles. The price was then about \$200 per pound. It was still somewhat of a curiosity at the Exposition of 1878, when it was exhibited in blocks, wire,

* Census Bulletin, 1890, no. 79.

sheets, and foil, and in various objects, from a thimble and penholder to dinner sets of aluminium bronze and metal. Telescopes, opera glasses, and other optical instruments, mounted wholly or in parts in aluminium, and chemical balances made of the same metal, were shown which were very light and strong. But the production from all sources—French, English and American—exclusive of alloys, from 1860 to 1889, did not exceed 116 tons—an inconsiderable quantity of metal. The indications are that the manufacture will be so largely increased from now on that this amount will soon be exceeded by the annual production.

The principal sources of aluminium have hitherto been cryolite from Greenland, and imported bauxite. The Greenland mine is near Arksut. In recent years, the Pennsylvania Salt Manufacturing Company has imported several thousand tons annually. A writer in the New York *Sun* describes the present appearance of the mine or quarry as “a hole in the ground, elliptical in shape, and say, 450 feet long by 150 wide.” The pit is 100 feet deep, and drills have penetrated 140 feet deeper and found cryolite all the way.

The increased demand for alumina-bearing materials has called attention to American deposits of bauxite. It has been found in several places in Floyd County, Georgia, and recently in Saline and Pulaski counties, Arkansas.

Since the year 1880 the United States has become the largest copper producer in the world, outstripping by far any other country. Out of a total of 226,055,962 pounds produced in 1889, 217,264,304

pounds were from Montana, Michigan and Arizona. Arizona, after Michigan, became a great copper-producing region, and later Montana outstripped both, and now maintains its rank as the leader. The capital invested in the United States is \$62,623,228; and the expenditure in 1889 was \$12,062,180.

There has been a remarkable increase since 1880 in coal production in West Virginia, Kentucky, Tennessee and Virginia, viz., from 3,469,336 to 11,649,266 tons,—the highest rates of increase being in Virginia and Tennessee. No State in the Union* is more favored in the extent and diversity of its mineral deposits than West Virginia. Her coal embraces all grades of bituminous, steam, cooking, and gas coals of the highest qualities. The natural water-ways, improved slack-water navigation, and increasing railroad facilities are important factors in the development of the resources of the State, which must soon be accorded a leading position in wealth and industrial prosperity.

According to the Census returns of 1890, the limestone industry is ahead of all other stone interests. Of the various uses made of the stone the production of lime is the chief, followed by that used for building purposes, next for flux in furnaces, and finally for bridge, dam, and railroad work. For building purposes the stone produced in Illinois and Indiana far outranks the other States; while for lime, the products of Pennsylvania and Maine are exceptionally large. Of the total output more than one-half was produced in the North Central States. Geographically described the division was as follows :

* Mr. John H. Jones, in *Census Bulletin 1890*, no. 94.

North Atlantic	-	-	-	\$6,491,834
South Atlantic	-	-	-	464,171
North Central	-	-	-	10,185,203
South Central	-	-	-	937,351
Western	-	-	-	1,016,620
				—————
				\$19,095,179

Costly and rash experiments in the use of limestone for outside building have brought about the exercise of discrimination in the selection or adaptation of this material for such purposes. But statistics are not given that throw any light on its relative use or disuse during the last ten, fifteen or twenty years.

In accordance with the present plan the final publications of the Eleventh Census (1890) will consist of the following volumes :

The Digest.

The Compendium :

Part 1—Population and social statistics.

Part 2—Wealth and industries.

Volume I.—Population—Robert P. Porter, Henry Gannett and William C. Hunt :

Part 1—Characteristics, conditions, distribution and parentage.

Part 2—Occupations.

Volume II.—Vital and social statistics—John S. Billings, surgeon, United States army :

Part 1—Mortality and vital statistics.

Part 2—Social statistics.

Part 3—Statistics of special classes.

Part 4—Frederick H. Wines—Crime, pauperism and benevolence.

Volume III.—Educational and church statistics :

Part 1—James H. Blodgett—Statistics of education and illiteracy.

Part 2—Henry K. Carroll—The religious bodies of the United States: Statistics showing the number of organizations, edifices and communicants; with historical and descriptive statements.

Volume IV.—Valuation, taxation and public indebtedness—J. Kendrick Upton and T. Campbell Copeland :

Part 1—Valuation and taxation.

Part 2—Receipts and expenditures.

Part 3—Indebtedness.

Volume V.—Farms, homes and mortgages—John S. Lord and George K. Holmes :

Part 1—Recorded Indebtedness.

Part 2—Ownership of farms and homes and indebtedness thereon.

Volume VI.—Agriculture :

Part 1—John Hyde—Statistics of farms: Irrigation, Frederick H. Newell; tobacco, Thomas N. Conrad; cereals, grass lands and forage crops, the fibres, forestry, sugar, live stock on farms, dairy products, wool, miscellaneous.

Part 2—Mortimer Whitehead—Horticulture, including truck farming, floriculture, seed farming, nurseries, tropic and semi tropic fruits, J. H. Hale; viticulture, live stock on ranges, live stock not on farms.

Volume VII.—Manufactures—Robert P. Porter and Frank R. Williams :

Part 1—General statistics of manufactures, statistics of specified industries, manufactures of cities.

Part 2—Reports of expert special agents, as follows :

Lumber-mills and saw mills and timber products, George A. Priest ; slaughtering and meat packing, Thomas C. MacMillan ; chemical manufactures and salt, Henry Bower ; clay and pottery products, Henry T. Cook ; coke and glass, Joseph D. Weeks ; cotton manufactures, Edward Stanwood ; dyeing and finishing of textiles, P. T. Wood ; electrical industry, Allen R. Foote ; manufactured gas, George W. Graeff ; iron and steel, Wm. M. Sweet ; printing, publishing and periodical press, wool manufacturers, S. N. North ; ship building, Charles E. Taft ; silk and silk goods, Byron Rose.

Part 3—Statistics of special industries : Agricultural implements, paper-mills, boots and shoes, leather, brick yards, flour and grist mills, cheese, butter and condensed milk factories, carriages and wagons ; leather.

Volume VIII.—The mineral industries of the United States—David T. Day ; iron ore, John Birkinbine ; gold and silver, Richard P. Rothwell ; copper, lead and zinc, Charles Kirchoff ; quicksilver, James B. Randol ; manganese, petroleum, natural gas, Joseph D. Weeks ; aluminium, R. L. Packard ; coal, John H. Jones ; stone, William C. Day ; precious stones, George F. Kunz ; mica, Lyman J. Childs ; mineral waters, Dr. A. C. Peale ; minor minerals, E. W. Parker.

Volume IX.—Fish and Fisheries—Charles F. Pidgin and Bert Fesler :

Part 1—Statistics of fisheries by geographical divisions.

Part 2—Statistics of fisheries by name.

Part 3—Appendix, containing scientific and proper names of fishes, with their geographical distribution ; illustrations of the principal food fishes of the United

States ; condensed description of fish by species ; statistical summary for each species for the United States.

Volume X.—Transportation—Henry C. Adams.

Part 1—Railroads : Statistics for the year ending June 30, 1890 ; statistics for ten years ending in 1889.

Part 2—Lake, ocean, river and canal transportation ; Canals, T. C. Purdy ; transportation on the Pacific coast, T. J. Vivian.

Part 3—Express business.

Part 4—Street railways, Charles H. Cooley.

Volume XI.—Insurance, Charles A. Jenney.

Volume XII.—Report and statistics of the condition of Indians living within the jurisdiction of the United States, 1890, taxed and untaxed, Thomas Donaldson.

Volume XIII.—Alaska, Ivan Petroff.

Veterans of the Civil War. (Seven volumes of 1000 pages each ; publication not yet authorized.)

Statistical Atlas. (Publication not yet authorized.)

It is expected that the Compendium will be out of press by the time of the meeting of Congress in November. With the exception of eight or ten special agents gathering the fragments of information in relation to manufactures the field work of the Census is completed. Work has been commenced on the text of the final population volume and some of the maps are in course of preparation.

Aside from the Bulletins giving the population by minor civil divisions for each State, the following bulletins have been issued by the population division :

Bulletin No. 16—Population of the United States by States and Territories : 1890. The correct account, 62,622,250.

Bulletin No. 37—Population by counties : North Atlantic and South Atlantic divisions.

Bulletin No. 40—Population by counties : North central division.

Bulletin No. 42—Population by counties : South central and western divisions.

Bulletin No. 48—The white and colored population of the South : 1890.

Bulletin No. 52—Urban population in 1890, of cities containing 8,000 inhabitants or more.

In the veteran section 256,498 cards have been transcribed to date.

GEOGRAPHIC NAMES. When the United States Hydrographic Office requested the co-operation of maritime nations in establishing rules for the systematic spelling of geographic names all over the world, several inquiries were propounded. This was one of them : "Standard geographical dictionary, or authorities on geographical names (national, local and universal)?" The replies are valuable and interesting.

Great Britain. "We consider no geographical dictionary as a standard, and hunt up different authorities which we consider most worthy of credence for every separate district. Hunter's Dictionary has been adopted as the guide for Hindustan."—*W. J. L. Wharton, Captain R. N., Hydrographer.*

Spain. "The geographical dictionary by Don Pasqual Madoz, published in 1845–50, is of a national character; also a dictionary of the corporations of Spain (cities and towns) by Señor Mariana. Of a general character there is the geographical dictionary by Riera, 1880–85; the Spanish-American Encyclopedia (being

published); the Universal Geography, published in 1830 by a literary society. Of a chorographical character, the geographical dictionary of Navarra and of the provinces of Álava, Guipúzcoa and Biscay, published by the Royal Historical Society (Academy) in 1802; that of the island of Cuba, by Don Jacobo de la Pezuela, 1863; and that of the Philippine Islands, by Buceta and Bravo, 1850. The Royal Historical Society (Academy) published many years ago a vocabulary of geographic generic names, and recently has published another more complete, with the corresponding French names, by Don Juan Vilanova y Piera."—*Pelayo Alcalá Galiano.*

Chile. El Diccionario geográfico de Chile, por F. S. Astaburuaga, New York, 1867. Un informe pasado a la Universidad, por Don B. Vicuña Mackenna, in the Annals of the University of 1863."—*Fco. Vidal Gormaz.*

Netherlands. "The kingdom of the Netherlands possesses no standard works concerning the spelling of geographical names of its country and its colonies; also, it has in that science no recognized authorities. The dictionary of geographical names in the Netherlands published by the Dutch Geographical Society (*Woord enlijst van de Aardrijkskundige namen in Nederland van het Nederlandsch Aardrijkskundig Genootschap*, 2d druk, Amsterdam, C. L. Brinkman) may, however, be regarded as a standard because a great many authors of geographical school books of the Netherlands, and chart and atlas makers follow it. As concerning the Dutch colonies in the East and West Indies there exists no dictionary that can be considered as authoritative."—*De D. V. Broecke, Captain, Hydrographer.*

Denmark. "Our authority on Danish names as used in charts and sailing directions is Statistisk-topografisk Beskrivelse of Kongeriget Denmark, ved I. P. Trap Kjóbenhavn 1879. On Icelandic names, Uppdrátr Islands á fjórum blöðum (chart of Iceland in four sheets) published by the Literary Society of Iceland. On Greenlandic names, Den Grönlandske Ordbog af Sam. Kleinschmidt, 1871, published by the Church and School Department in Copenhagen."—*G. Holm, Director, Sókaart Archivet.*

China. "The best geographical dictionary is G. M. H. Playfair's Cities and Towns of China. London, Trubner & Co., 1879."—*A. M. Bisbee, Coast Inspector.*

Austria-Hungary. "We have for every province in the empire official repertories of the names of every place in it, viz. : Special Ortsrepertorium von Steiermark, Kärnten, Krain, Böhmen, etc. ; also Geographisch Statistisches Repertorium der bewohnten Orte im Königreich Dalmatien, Slovnik Geografizmy (Geographisches Lexicon) des Königreichs Polen und anderer Slavischer Länder ; Ortslexikon des Königreichs Polen ; Ortschafts-und-Bevölkerungs-Statistik Bosniens und der Hercegovina. The names of places in the kingdom of Hungary are contained in the Ortslexikon von Ungarn by Jekelfalussy, and in the Postlexikon der Länder der ungarischen Krone. For the adjacent part of Russia, Ortslexikon von Russland. We consider generally the geographic appendix to Webster's Dictionary to contain the best system of the pronunciation of geographic appellations originating in different languages but spelled in English."—*F. Baron de Haan, Captain I. and R. Navy, Vorstand des K. K. Küstenbeschreibungs-Bureaus.*

The third Bulletin of the United States Board on Geographic Names contains decisions rendered at the instance of the Light-House Board. They relate to geographical features upon the sea and lake coasts, and upon the navigable rivers of the United States, and concern merely the elision of the possessive form of the name. It is understood that the fourth Bulletin will relate to the names of counties, cities and towns.

DICTIONARY OF ALTITUDES.—The second edition of Mr. Henry Gannett's Dictionary of Altitudes* might well be called a *New Dictionary of Altitudes*. The large amount of new matter, and the substitution of a single alphabetic arrangement for an alphabetic arrangement by States gives it the character of a new work. The number of localities given is approximately twenty-four thousand, being an increase of about six thousand. The data are mainly from Government and State surveys, city engineers' reports, the Mississippi and Missouri River Commissions, and railroad corporations. As to the latter, that is to say, the profiles of railroads, the editor gives them a high value. Many of them, he says, are wonderfully accurate, some comparing favorably with the precise levelling of the Coast and Geodetic Survey, and the Mississippi and Missouri River Commissions. Mr. Gannett has in his possession abstracts of the profiles of more than *nine-tenths* of the railroad mileage of the country, which he finds of the greatest value in the preparation of topographic maps. He accepted the profiles of the Pennsylvania railroads, published in Appendix NN of the reports of the Second Geological Survey of Pennsylvania, but the profiles of

* U. S. Geol. Survey: Bulletin No. 76.

railroads in New Hampshire, Virginia, North Carolina, Alabama, Ohio, Indiana, Wisconsin, Minnesota and Iowa published in reports of geological surveys of those States, that were used quite fully in the first edition, have been in large part supplanted by profiles recently received from the railroads, "which are presumably more accurate." The adjustment of levels has been less perplexing than formerly, because of the lines of precise levels which have been run by the Coast Survey and the Mississippi and Missouri River Commissions. The changes of leading railroad centres by re-adjustments are not great. Cincinnati has been lowered eight feet, Kansas City has been raised two feet, Omaha one foot, and Denver seven feet. In the case of less important points, the changes have been, in many cases, of greater amount.

The work done by the War Department between 1850 and 1855 for the purpose of finding a practicable railroad route to the Pacific (*Pacific Railroad Reports*) Mr. Gannett says, taken as a whole is poor, owing mainly to the fact that practically there were no barometric base stations. The hypsometric work of the expedition near the northern boundary under Governor Stevens was particularly bad. These remarks concerning the quality of the work apply equally well to all the earlier expeditions to the west, owing doubtless to the same cause.

GEOLOGICAL PHOTOGRAPHS.—The Geologic Society of America has arranged for the collection, preservation and systematic registration of photographs of geologic interest in the United States. The object of the movement is to make a photo-geologic survey, and se-

cure a national collection of photographs illustrating the geology of the country in order that investigators may have material for comparative study, and teachers better illustrations to use in teaching geology. It has already received several hundred photographs, which have been classified, catalogued, and temporarily bound in the form of books; and a scale of prices arranged for mounted or unmounted copies. The committee, consisting of Prof. J. F. Kemp, Ithaca, N. Y.; Prof. W. M. Davis, Cambridge, Mass.; and J. S. Diller, U. S. Geol. Survey, Washington, solicit the donation of good photographs which clearly illustrate important geologic phenomena, among which may be mentioned typical views of eruptive and sedimentary rocks, of dikes, bosses, contacts, transitions, folds, faults, jointing, cleavage, weathering, glaciers, etc.

ALASKA.—The latest advices from the Alaska boundary survey party, dated June 20, 1891, are from Camp Davidson, Upper Yukon River, near eastern boundary. This survey, it will be remembered, is to secure data to be used by the Government in the negotiation, adjustment, and definite settlement and location of the boundary between Alaska and British Columbia, and is being made by the United States Coast and Geodetic Survey at the instance of the Department of State.

The health of the party, under Mr. J. E. McGrath, has been excellent in the main during two years in a severe region. The autumn months of 1890 proved very unfavorable, September being marked by almost continuous rain, and October and November very cloudy. On May 9th of this year the first interior contact of Mercury with the sun was observed, and on the

6th of June the partial eclipse of the sun. A number of photographs of both these phenomena were taken. Regular monthly sets of magnetics were observed through the whole season, and the declination was observed every fifteen minutes through twenty-four hours on one day in each month, during the last three months. Meteorological observations were carried through without interruption, readings being recorded three times a day.

Plenty of provisions came up for the party last year, as a great many of the articles, that were wrecked in 1889 belonging to both parties, were sent to one point (Camp Davidson), together with some supplies from the Alaska Commercial Company's stock at St. Michaels. As it happened that the traders at Forty mile creek did not receive much of a supply, the extra quantity that came was a welcome addition to the stock in the country, and was of material benefit to whites and Indians. Everything that could be spared was eagerly picked up, the white men paying for their goods in gold dust, and the Indians trading meat, moccasins, etc., for their share. Game was very scarce.

The average temperature of the months, after last December, showed an increase of a few degrees over the same months last year. The lowest minimum temperature was secured January 16th, viz.: $60^{\circ} 5'$ below zero.

Mr. McGrath expected to reach St. Michaels, home-ward bound, by the 25th of August.

Dr. W. C. Kingsbury, the surgeon of the party, has already returned, having reached St. Louis—his home—August 23d. He says that valuable collections of small animals, birds, insects, and flowers have been se-

cured, that the country along the upper Yukon is fast filling up with people who have the gold fever, and that miners are excited over prospects of fortune. He also says that the result of the Government Survey has been most satisfactory.

Nothing has yet been heard from Mr. Israel C. Russell who went to Alaska via Icy Bay, under the auspices of the National Geographic Society to explore further the region about Mount St. Elias. H.